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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/809,870

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Yoshihito Asao

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EXAMINER

RUTLAND WALLIS, MICHAEL

ART UNIT

PAPER NUMBER

2836

MAIL DATE

DELIVERY MODE

07/06/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No.		Applicant(s)	
	10/809,870		ASAO ET AL.	
	Examiner		Art Unit	
	Michael Rutland-Wallis		2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-17 is/are pending in the application.
- 4a) Of the above claim(s) 2,4,6-8, 10 and 12-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,3,5,11 and 15-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/23/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Information Disclosure Statement

Attached Applicant will find a signed copy of the previously submitted IDS statement correcting the missing initialed reference.

Also attached is a machine translated version of Masaki et al. also available on line at the Japanese Patent Office website in order to better facilitate the understanding of the teachings disclosed by Masaki et al.

Applicant's arguments filed 5/22/2007 have been fully considered but they are not persuasive.

Applicant contends there is no teaching of a metal plate for electrically connecting a battery and an inverter, citing the base plate or the junction board of Imai does not connect a battery and an inverter unit.

In response Imai teaches the mounting of circuitry via a junction board (17) and junction plate (170) both shown in at least figure 5. Inverter circuitry is contained within the PDU item 9, which is shown in figure 2 (described in paragraph 0011). Imai teaches a board and base plate arrangement may be used to fix the circuitry to the frame located on the side of the battery. It is also noted the primary purpose of Imai is not directed to the inverter connection as Applicant points out (page 2 of the Remarks). Instead Imai is directed to modularly connecting circuitry with a battery unit in effort to

reduce maintenance. Imai provides a teaching of using a plate as a method to connect or mount the battery with an inverter among other circuitry.

Applicant also notes the circuitry of Masaki is contained within a container and thereby concluding there is no need to connect the battery and the inverter. Masaki is silent on how the circuitry is connected and mounted. Masaki merely shows a simple block diagram layout of the components. The use of a container in Masaki would not prevent the use of a plate in connecting the inverter and the battery as such a connection would save wiring and reduce maintenance as taught by Imai.

In view of the above the rejection is deemed proper and is therefore maintained.

Claim Objections

Claim 11 now depends upon a canceled claim and therefore fails to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant should amend claim 11 to properly depend from a currently pending claim or cancel the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masaki et al. (JP Pub No. 07-007810) in view of Imai (JP Pub No. 2001-023700)

With respect to claim 1 Masaki teaches a vehicle power supply system comprising: a battery (item 12); an inverter unit (item 6) for converting DC electric power of the battery into AC electric power and supplying it to a rotating electric machine (item 3 motor) to drive it; an AC wiring line (item 5) for connecting the rotating electric machine and the inverter unit; and a DC wiring line (item 13) for connecting the inverter unit and the battery (see Fig. 1), wherein the inverter unit is placed in a vicinity of the battery so that the DC wiring line becomes shorter than the AC wiring line (see constitution, i.e. abstract translation). Masaki teaches in figure 1 the battery and the inverter are arranged in the same housing, and further teaches the battery and the inverter are arranged next to each other. Masaki does not teach the use of a metal plate in the connection of the battery to the inverter. Imai teaches the use of a plate and mounting board (items 170 and 17) attached to the side a battery to affix circuits. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a metal plate to connect the battery and the inverter unit in order to secure inverter unit.

With respect to claim 11 Masaki teaches the inverter unit (item 6) is held and fixed (secured in a housing) to the battery (item 12) by the electric connection body (connection wires and secured in housing) for electrically connecting the battery and the inverter unit.

With respect to claim 16 Imai teaches the use of a junction board (15) which is fixed with the inverter unit. Imai does not teach the method of which the plate and the junction board are attached. As welding is a well known means of attaching such circuits it would have been obvious to one of ordinary skill in the art at the time of the invention to weld the board and plate of Imai to form one integral structure to reduce the wiring and maintenance.

Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masaki et al. (JP Pub No. 07-007810) in view of Imai (JP Pub No. 2001-023700) in view of Saka et al. (JP Pub No. 2004-120936)

With respect to claims 3 and 5 Masaki teaches in figure 1 the battery and the inverter are arranged in the same housing, and further teaches the battery and the inverter are arranged next to each other. Masaki does not teach the integral fixing to the upper or side face of the battery. Saka teaches making the battery and the inverter integral (see Solution in translated abstract) fixing of the inverter to the battery. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Masaki to integrally fix the inverter to the side or upper face of the battery since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893)

Alternatively Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masaki et al. (JP Pub No. 07-007810) in view of Imai (JP Pub No. 2001-023700)

With respect to claims 3 and 5 Masaki teaches in figure 1 the battery and the inverter are arranged in the same housing, and further teaches the battery and the inverter are arranged next to each other. Masaki does not teach the integral fixing to the upper or side face of the battery. It has been held that forming in one piece an article, which has formerly been formed in two pieces, and put together, involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Masaki to integrally fix the inverter to the side or upper face of the battery in order to in order to reduce the size of the inverter.

Claims 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masaki et al. (JP Pub No. 07-007810) in view of Imai (JP Pub No. 2001-023700) in further view of Becker (U.S. Pat. No. 4,535,863) Masaki teaches the battery is contained within a housing or container. Imai teaches the battery is contained within a frame housing. Neither Masaki nor Imai clearly picture a tray. Becker teaches the use of a battery tray and securing means. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Masaki and Imai to include the use of a tray in order to provide further means to insure the battery remains in place.

Claims 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masaki et al. (JP Pub No. 07-007810) in view of Imai (JP Pub No. 2001-023700) in further view of Tamba et al. (U.S. Pat. No. 6,621,701) Imai teaches the use of inverter mounted to the vehicle power supply, however neither Masaki nor Imai teach the use of a liquid cooling device to cool the inverter unit. Tamba teaches the use of a liquid cooling device

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to cool circuitry such as an inverter. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Masaki and Imai to use a liquid cooling device similar to the one seen in Tamba in order to prevent damage and increase the life of the inverter.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Rutland-Wallis whose telephone number is 571-272-5921. The examiner can normally be reached on Monday-Thursday 7:30AM-6:00PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MRW



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